

IN THE CLAIMS

Claim 1. (Currently Amended) An audio signal processing method that performs virtual acoustic image localization processing of digital audio signals based on at least one type of information among position formation, movement information, and localization information, the method comprising the steps of:

when there are a plurality of changes in said information within a prescribed unit of time, generating a single modified information ~~change~~ at the end of said prescribed unit of time based on said plurality of changes in said information; and

performing virtual acoustic image localization processing for said digital audio signals based on said generated single modified information ~~change~~,

wherein said prescribed unit of time is an integral multiple of the sampling period of said digital audio signals.

Claim 2. (Currently Amended) The audio signal processing method according to Claim 1, wherein

the step of generating said single modified information ~~change~~ is performed using only said information presented last within said prescribed unit of time.

Claim 3. (Withdrawn) The audio signal processing method according to Claim 1, wherein

the step of generating said single information change is performed using only said information presented first within said prescribed unit of time.

Claim 4. (Withdrawn) The audio signal processing method according to Claim 1, wherein

the step of generating said single information change is performed using a result of one of addition and averaging of said plurality of information within said prescribed unit of time.

Claim 5. (Withdrawn) The audio signal processing method according to Claim 1, wherein

the step of generating said single information change is performed by estimation, based on said plurality of information within said prescribed unit of time.

Claim 6. (Withdrawn) The audio signal processing method according to Claim 1, wherein

the step of generating said single information change is performed only for those information elements within said plurality of information elements in which the changes have exceeded a prescribed threshold within said prescribed unit of time.

Claim 7. (Withdrawn) The audio signal processing method according to Claim 1, further comprising

imparting random fluctuations to said generated single information change.

Claims 8 and 9. (Canceled)

Claim 10. (Withdrawn) The audio signal processing method according to Claim 1, wherein

when there no change in said information within said prescribed unit of time, performing said virtual acoustic image localization processing based on said single information change applied to the immediately preceding prescribed unit of time.

Claim 11. (Withdrawn) The audio signal processing method according to Claim 1, wherein

when there is no change said information within said prescribed unit of time, said information change applied to said single virtual acoustic image localization processing is not transmitted.

Claim 12. (Currently Amended) The audio signal processing method according to Claim 1, wherein

said information for said digital audio signals can be modified according to user operations.

Claim 13. (Currently Amended) An audio signal processing method that performs virtual acoustic image localization processing for digital audio signals having at least one type of information among position information, movement information and localization information, based on said information, the method comprising the steps of:

when a plurality of said information elements are contained within a prescribed unit of time, generating a single modified information change at the end of said prescribed unit of time based on said plurality of said information elements; and

performing virtual acoustic image localization processing for said digital audio signals based on ~~this said~~ generated single modified information change,

wherein said prescribed unit of time is an integral multiple of the sampling period of said digital audio signals.

Claim 14. (Currently Amended) The audio signal processing method according to Claim 13, wherein

said step of generating a single information change is

performed using only a last one of said plurality of said information elements presented within said prescribed unit of time.

Claim 15. (Withdrawn) The audio signal processing method according to Claim 13, wherein

said step of generating a single information change is performed using only a first one of said plurality of said information elements presented within said prescribed unit of time.

Claim 16. (Withdrawn) The audio signal processing method according to Claim 13, wherein

said step of generating a single information change is performed by one of adding and averaging said plurality of said information elements within said prescribed unit of time.

Claim 17. (Withdrawn) The audio signal processing method according to Claim 13, wherein

said step of generating a single information change is performed by estimation based on said plurality of said information elements within said prescribed unit of time.

Claim 18. (Withdrawn) The audio signal processing method according to Claim 13, wherein

said step of generating a single information change is performed only for those information elements in said plurality of said information elements within said prescribed unit of time in which the change exceeds a prescribed threshold.

Claim 19. (Withdrawn) The audio signal processing method according to Claim 13, further comprising a step of imparting random fluctuations to said generated single

information change.

Claims 20 and 21. (Canceled)

Claim 22. (Withdrawn) The audio signal processing method according to Claim 13, wherein

when there no change in said information within said prescribed unit of time, said step of performing virtual acoustic image localization processing is performed based on said information change applied to the immediately preceding prescribed unit of time.

Claim 23. (Withdrawn) The audio signal processing method according to Claim 13, wherein

when there is no change in said information within said prescribed unit of time, said information change applied to said virtual acoustic image localization processing is transmitted.

Claim 24. (Original) The audio signal processing method according to Claim 13, wherein

said information possessed by said audio signals can be modified according to user operations.

Claim 25. (Currently Amended) An audio signal processing method in which, when a plurality of information changes of at least one information type among position information, movement information, and localization information are applied to digital audio signals within a prescribed unit of time, the method comprising the steps of:

generating a ~~single~~ modified information ~~change~~ at the end of said prescribed unit of time based on said plurality of information changes;

performing virtual acoustic image localization processing in advance on said audio signals based on a plurality of localization positions of the digital audio signals and producing a plurality of synthesized audio signals;

and based on the generated single modified information change, reading out from storage means, in which are stored the plurality of synthesized audio signals obtained from the localization processing, at least one of said synthesized audio signals,

wherein said prescribed unit of time is an integral multiple of the sampling period of said digital audio signals.

Claim 26. (Currently Amended) The audio signal processing method according to Claim 25, wherein

said step of generating a single modified information change—~~is~~ performed using only a last one of said information elements presented within said prescribed unit of time.

Claim 27. (Withdrawn) The audio signal processing method according to Claim 25, wherein

said step of generating a single information change is performed using only a first one of said information elements presented within said prescribed unit of time.

Claim 28. (Withdrawn) The audio signal processing method according to Claim 25, wherein

said step of generating a single information change is performed by adding and averaging said plurality of information elements within said prescribed unit of time.

Claim 29. (Withdrawn) The audio signal processing method according to Claim 25, wherein

said step of generating a single information change is

performed by estimation based on said plurality of information elements within said prescribed unit of time.

Claim 30. (Withdrawn) The audio signal processing method according to Claim 25, wherein

said step of generating a single information change is performed only for those information elements in said plurality of information elements within said prescribed unit of time in which the change exceeds a prescribed threshold.

Claim 31. (Withdrawn) The audio signal processing method according to Claim 25, further comprising a step of imparting random fluctuations to said generated single information change.

Claims 32 and 33. (Canceled)

Claim 34. (Withdrawn) The audio signal processing method according to Claim 25, wherein

when there is no change in said information within said time unit, said step of performing virtual acoustic image localization processing is performed based on said single information change applied to an immediately preceding prescribed unit of time.

Claim 35. (Withdrawn) The audio signal processing method according to Claim 25, wherein

when there is no change said information within said prescribed unit of time, said single information change applied to said virtual acoustic image localization processing is not transmitted.

Claim 36. (Currently Amended) The audio signal

processing method according to Claim 25, wherein

said information possessed by said digital audio signals can be modified according to user operations.

Claim 37. (Currently Amended) An audio apparatus, comprising

an audio signal processing unit for performing virtual acoustic image localization processing of digital audio signals based on at least one information type among position information, movement information, and localization information thereon; and

information change generation means for generating, when a plurality of changes are made to said information within a prescribed time unit, ~~one—single modified~~ information change within said prescribed time unit based on said plurality of information changes, wherein

said audio processing unit is controlled, based on the ~~one—single modified~~ information change—generated by said information change generation means, to perform virtual acoustic image localization processing of said digital audio signals,

wherein said prescribed unit of time is an integral multiple of the sampling period of said digital audio signals.

Claim 38. (Currently Amended) An audio signal processing apparatus, comprising:

an audio processing unit for performing virtual acoustic image localization processing of digital audio signals, having at least one type of information among position information, movement information, and localization information, associated with time information and/or event information, based on said information; and

information change generation means for generating, when there are a plurality of said information changes within a

prescribed time unit, ~~one—single modified information change~~ at the end of said prescribed time unit based on said plurality of information changes, wherein

said audio processing unit is controlled, based on the ~~one—single modified information change~~ generated by said information change generation means, to perform virtual acoustic image localization processing of said digital audio signals,

wherein said prescribed unit of time is an integral multiple of the sampling period of said digital audio signals.

Claim 39. (Currently Amended) An audio signal processing apparatus, comprising:

an information change generation means for generating, when a plurality of changes in at least one type of information for digital audio signals among position information, movement information, and localization information are requested within a prescribed time unit, ~~one—single modified information change~~ at the end of said prescribed time unit based on said plurality of information changes; and

storage means for storing a plurality of synthesized audio signals obtained from the localization processing, wherein

virtual acoustic image localization processing is performed in advance on said digital audio signals based on a plurality of localization positions of the digital audio signals, and based on said ~~one—single modified information change~~ generated by said information change generation means, from said storage means in which are stored the plurality of synthesized audio signals obtained from this localization,

wherein said prescribed unit of time is an integral multiple of the sampling period of said digital audio signals.